

CLAIMS

1. A fall arrest device for use on an elongate support, said device comprising:
chassis means having safety support retaining means to retain an elongate support whilst allowing movement of the device therealong, and including a sliding element for slidably engaging said elongate support;
first and second locking cam means for locking the device to the elongate support in a fall arrest situation;
first and second link means; and
attaching means for attaching personnel safety means to the device and transmitting a load from the personal safety device to said link means;
in which said first and second locking cam means comprise respective first and second cam elements each arranged for rotation about a respective first axis relative to the chassis and able to move between a first locking position in which the cam element traps the elongate support between itself and the sliding element and a second released position in which the cam element does not trap the elongate support;
the first and second link means each being connected to a respective one of the first and second cam elements for mutual rotation about a respective second axis separated from said first axis, the first and second link means being connected together for mutual rotation about a third axis separated from said first and second axes, and the attaching means being able to move relative to the link means, so that the first and second locking cam means can be moved between their first and second positions by loads applied to the device through the attaching means;
in which each of the first and second link means comprises two parts arranged for reversible relative movement in response to an applied load from the attaching means above a predetermined value, the movement being such that a part of the link means intermediate said second and third axes descends relative to said second axis.
2. A device as claimed in claim 1, in which the cam means and link means are arranged so that said movement of the two parts of a link will move at least one of said locking cam means towards its first locking position.

3. A device as claimed in claim 1 or claim 2, in which the first and second locking cam means are arranged for rotation relative to one another about a common first axis.
4. A device as claimed in claim 3, in which the first and second locking cam means and said common first axis are arranged for rotation about a fourth axis spaced from and parallel to the first, the fourth axis being located nearer than the first axis to the sliding element.
5. A device as claimed in claim 4, in which the first and second locking cam means are arranged for rotation about a boss which is arranged for rotation about the fourth axis.
6. A device as claimed in any preceding claim, in which the chassis means includes at least one rotatable element having a peripheral recess.
7. A device as claimed in claim 6, when dependent on one of the claims 4 or 5, in which the rotatable element can rotate about the fourth axis.
8. A device as claimed in any preceding claim, in which the first and cam elements and first and second link means form a quadrilateral linkage.
9. A device according to claim 8, in which the attaching means includes a loop passing around the link means so that the attaching means can transmit a load to the device by the loop bearing on a bearing surface of the link means facing the interior of the quadrilateral linkage.
10. A device according to any preceding claim, in which each link means comprises a first arm arranged for rotation about a respective second axis and a second arm arranged for rotation about said third axis, the first and second arms being connected for mutual rotation about a fifth axis, said reversible relative movement being mutual rotation of the first and second arms about the said fifth axis.
11. A device as claimed in claim 10, when dependent on claim 9, in which the bearing surface of each first arm is concave.

12. A device as claimed in claim 10 or claim 11, when dependent on claim 9, in which the bearing surface of each second arm is concave.
13. A device according to claim 4 or claim 5, and further comprising a control means arranged for rotation about said fourth axis, so that the cam elements can be moved into the second, unlocked position by said rotation.
14. A device according to claim 10, when dependent on claim 9, in which loads applied to the bearing surfaces of the first arms by the loop will urge at least one of the cam elements towards the first locking position.
15. A device according to claim 14, and further comprising an element limiting the movement of said loop so that it can only bear on the bearing surfaces of the first arms.
16. A fall arrest device substantially as shown in or as described with reference to Figures 3 to 9 of drawings.